TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

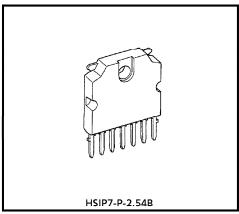
# TA8403K

## POWER AMPLIFIER FOR DRIVING A DEFLECTION CIRCUIT OF A **COLOR TELEVISION**

TA8403K is a power amplifier for driving a vertical deflection circuit of a small and medium screen size color television. TA8403K is available for constructing a stable deflection circuit with small number parts in an application with a single chip signal processing IC TA8879N.

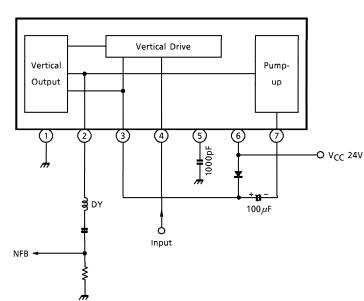


- Large output current: 1.8Ap-p (Max.)
- Small power dissipation with a pump-up circuit
- Small number external parts



Weight: 0.7g (Typ.)

#### **BLOCK DIAGRAM**



#### **TERMINAL NAME**

- 1. GND
- 2. Vertical Output
- 3. Pump-up Power Supply
- 4. Input
- 5. Phase Compensation
- 6. Power Supply
- 7. Pump-up Output

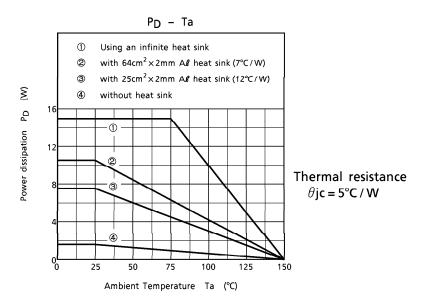
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#### **MAXIMUM RATINGS** (Ta = 25°C)

| CHARACTERISTIC               | SYMBOL          | RATING               | UNIT |  |
|------------------------------|-----------------|----------------------|------|--|
| Power Supply Voltage         | Vcc             | 30                   | V    |  |
| Pump-up Power Supply Voltage | $v_{ m Vt}$     | 60                   | V    |  |
| Terminal Voltage             | E <sub>in</sub> | GND − 0.3 ~          | V    |  |
|                              |                 | V <sub>Vt</sub> +0.3 |      |  |
| Input Signal Voltage         | e <sub>in</sub> | 0~1.2                | V    |  |
| Power Dissipation            | $P_{D}$         | 15 (Note)            | W    |  |
| Operating Temperature        | $T_{opr}$       | - 20~85              | °C   |  |
| Storage Temperature          | $T_{stg}$       | - 55~150             | °C   |  |

(Note) Using an infinite heat sink



### RECOMMENDED OPERATING CONDITION

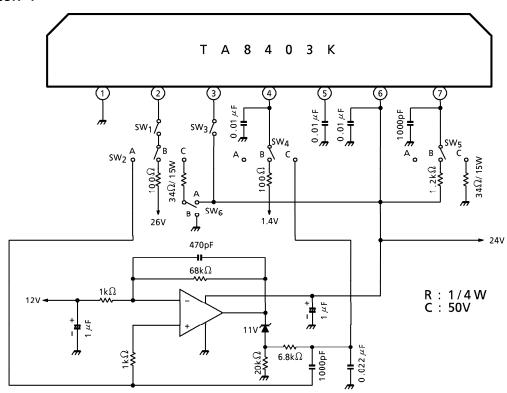
| CHARACTERISTIC            | SYMBOL            | MIN. | TYP. | MAX. | UNIT             |
|---------------------------|-------------------|------|------|------|------------------|
| Power Supply              | Vcc               | _    | 24   | 27   | V                |
| Deflection Output Current | l <sub>2p-p</sub> | _    | _    | 1.8  | A <sub>p-p</sub> |

#### **ELECTRICAL CHARACTERISTICS** (Ta = 25°C, V<sub>CC</sub> = 24V)

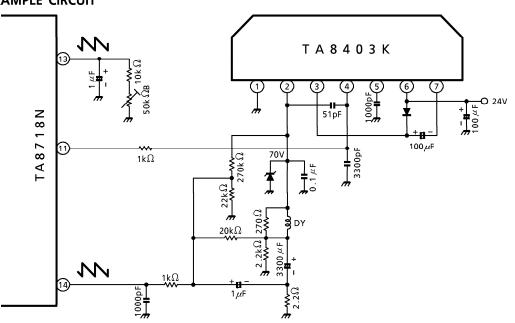
| CHARACTERISTIC  | SYMBOL                 | TEST<br>CIR-<br>CUIT | TEST CONDITION | MIN.     | TYP. | MAX. | UNIT |    |
|---|------------------------|----------------------|----------------|----------|------|------|------|----|
| Saturation Voltage of the Vertical Output Transistor (1)    | V <sub>v (sat)</sub> 1 | 1                    | (Note 1)       | 0.3      | 0.5  | 1.0  | ٧    |    |
| Saturation Voltage of the<br>Vertical Output Transistor (2) | V <sub>v (sat) 2</sub> | 1                    | (Note 2)       | 1.0      | 1.8  | 3.6  | V    |    |
| Saturation Voltage of the<br>Pump-up Output Transistor (1)  | V <sub>p (sat) 1</sub> | 1                    | (Note 3)       | 1.0      | 2.0  | 3.0  | V    |    |
| Saturation Voltage of the<br>Pump-up Output Transistor (2)  | V <sub>p (sat) 2</sub> | 1                    | (Note 4)       | 0.3      | 0.8  | 1.6  | V    |    |
| Output Current with no input                                | lь                     | 1                    | 7 (010         | (Noto E) | 10.0 | 15.0 | 30.0 | mA |
| Center Output Voltage                                       | V <sub>center</sub>    |                      | 1 (Note 5)     | 10.0     | 12.0 | 14.0 | V    |    |

- (Note 1)  $SW_1: ON, SW_2: C, SW_3: ON, SW_4: B, SW_5: A, SW_6: A$  Measure the voltage of pin2.
- (Note 2)  $SW_1: ON, SW_2: C, SW_3: ON, SW_4: A, SW_5: A, SW_6: B$ Measure the voltage of pin2,  $V_2: V_V(sat)_2 = V_{CC} - V_2$
- (Note 3)  $SW_1: ON, SW_2: B, SW_3: OFF, SW_4: A, SW_5: C, SW_6: A$ Measure the voltage of pin7, V<sub>7</sub>.  $V_{P(sat)} = V_{CC} - V_7$
- (Note 4)  $SW_1: OFF, SW_2: C, SW_3: OFF, SW_4: A, SW_5: B, SW_6: B$  Measure the voltage of pin7.
- (Note 5)  $SW_1: ON, SW_2: A, SW_3: ON, SW_4: C, SW_5: A, SW_6: B$  Measure the sink current into pin3. Measure the voltage of pin2.
- (Note 6) TA8403K is checked its output wave form in a real operating circuit.

### **TEST CIRCUIT 1**



#### **APPLICATION EXAMPLE CIRCUIT**



# **OUTLINE DRAWING** HSIP7-P-2.54B Unit: mm 16.<u>0±0.2</u> 0.8±0.2 ø3.2±0.2 3.0±0.3 12.9±0.3 14,4±0,3 0.5±0.2 1.6MIN $5.5\pm0.3$ 0.88TYP $0.6^{+0.1}_{-0.06}$ 0.6±0.1 ⊕ Ø0.25 € 1.2±0.2 1.2±0.1 2.54 17.0±0.2 <u>mm mm mm mm</u>

Weight: 0.7g (Typ.)